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(51) INT CL[7]
G06F 17/30

(52) UK CL (Edition T)
G4A AFGN AUDB

(56) Documents Cited

WO 2002/001397 A1	WO 2001/018686 A1
WO 1999/057656 A1	JP 100187563 A
JP 2001282672 A	US 5978842 A
US 5978807 A	US 5768528 A

http://www.irasia.com/listco/hk/hutchison/newsflash/n010117.htm, 17 January 2001

(58) Field of Search
UK CL (Edition T) G4A AFGN AUDB
INT CL[7] G06F 17/30
Online: WPI, EPODOC, PAJ, INSPEC, XPESP, IBM TDB, IEL, COMPUTER, Selected Internet sites

(54) Abstract Title
Automatic downloading for mobile computing devices

(57) A method of automatically downloading from the Internet for a wireless device (such as a PDA or mobile phone, where data is downloaded from predefined addresses in accordance with a prearranged schedule. The information to be downloaded, as well as the scheduled download times, may be a mixture of predefined and user-selected information and download times. In accordance with a schedule stored in the PDA, a connection is made to the Internet through the wireless mobile phone and the required information is downloaded.

User interface Default Screen

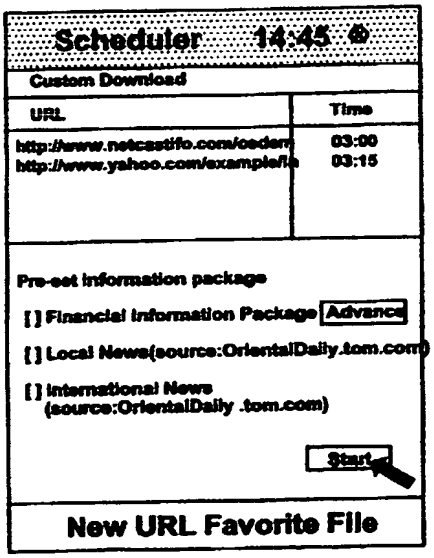

Fig.2.1

GB 2 372 587 A

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wing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

PADS-PDA Automatic Download Scheduler

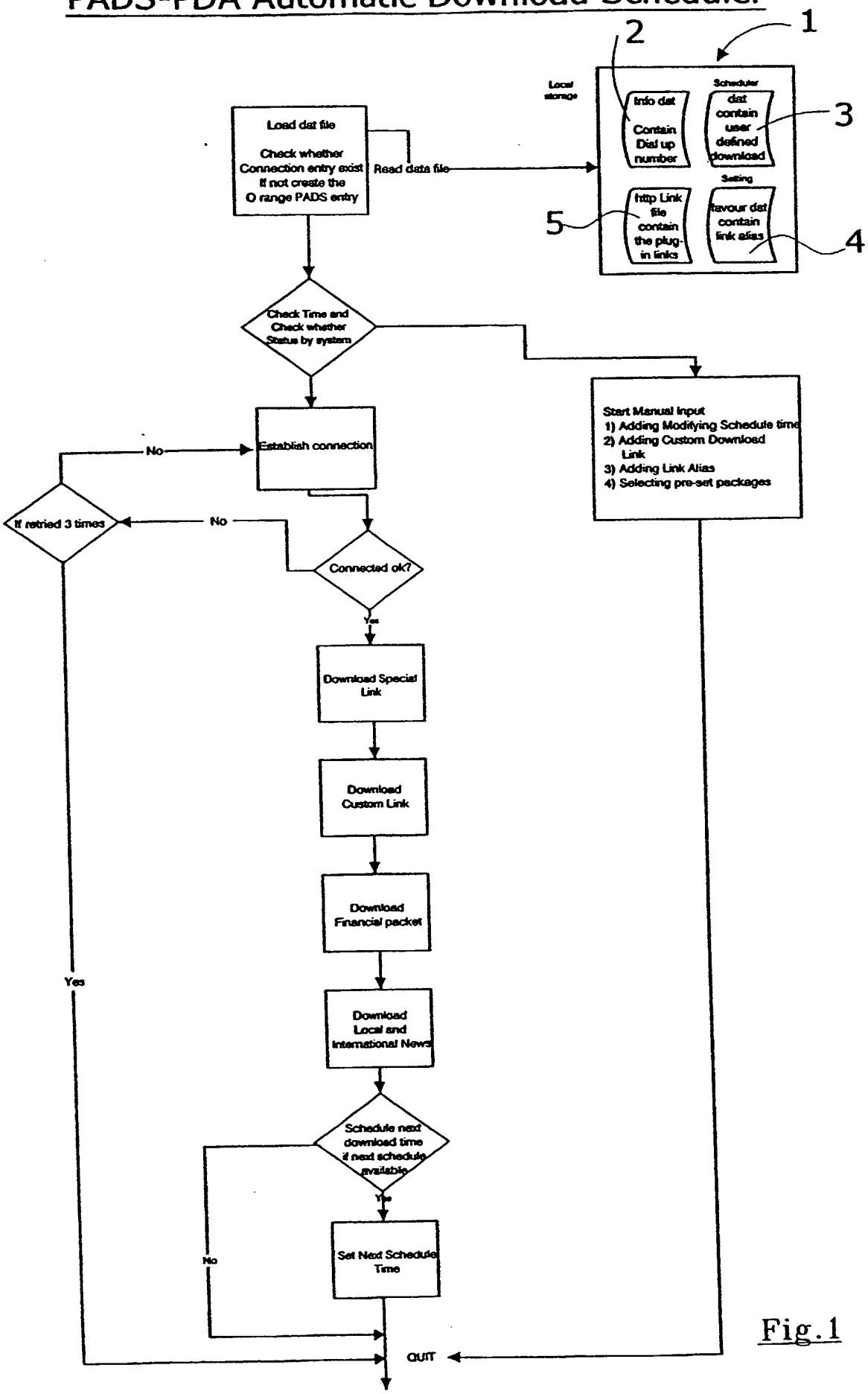

Fig.1

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User interface
Default Screen

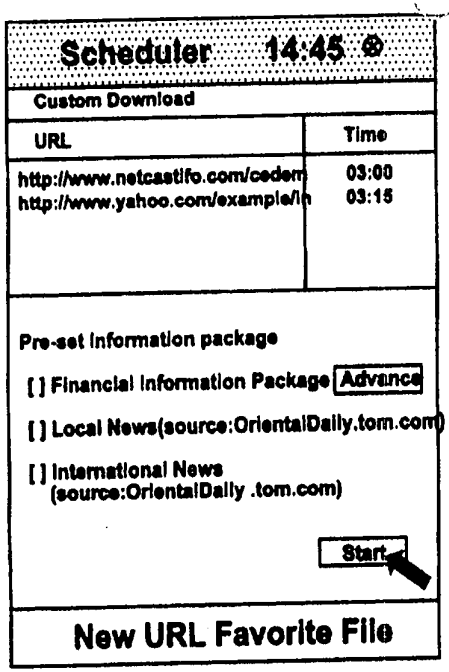
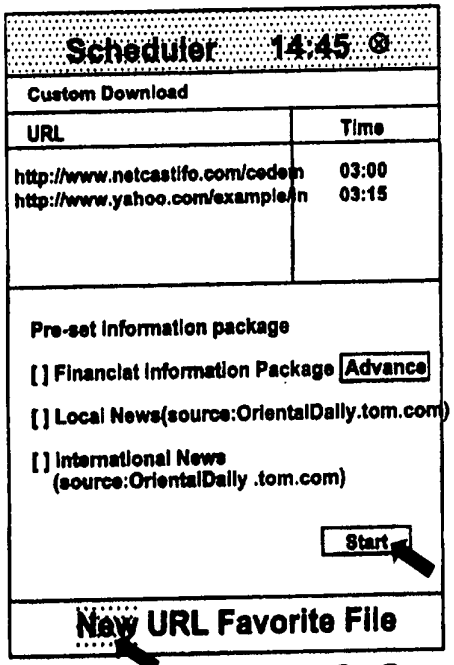


Fig.2.1



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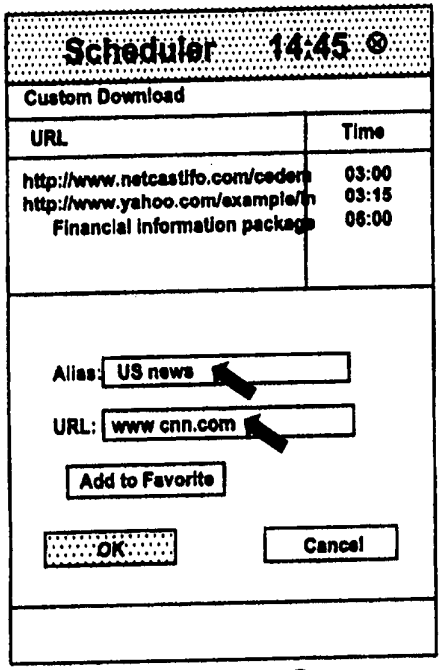

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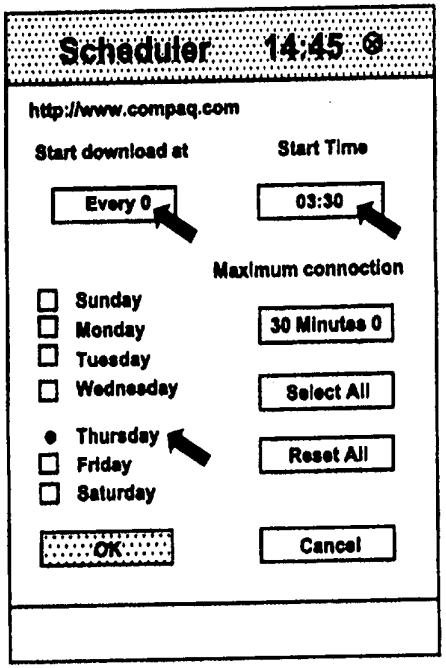

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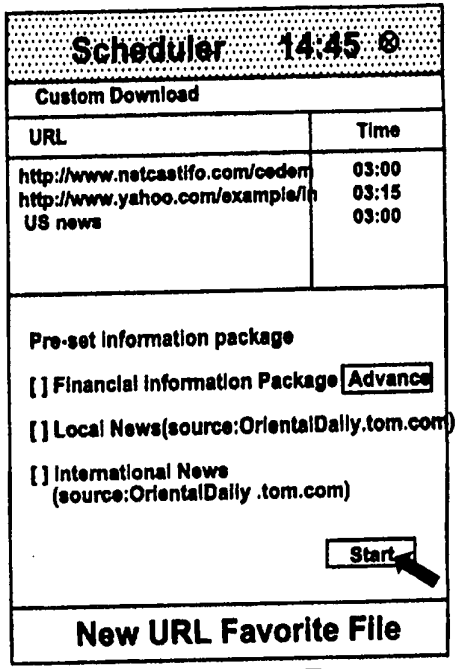

Fig.2.5

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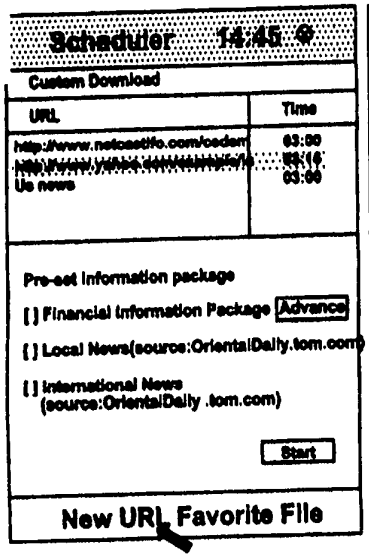

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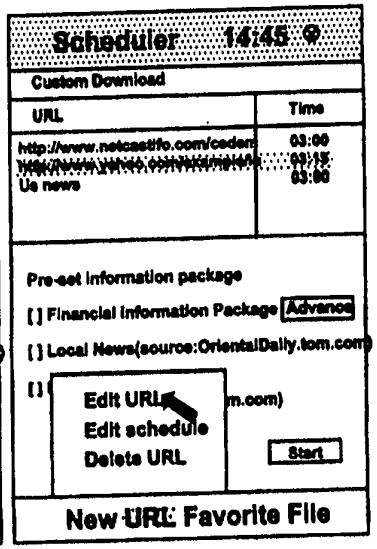

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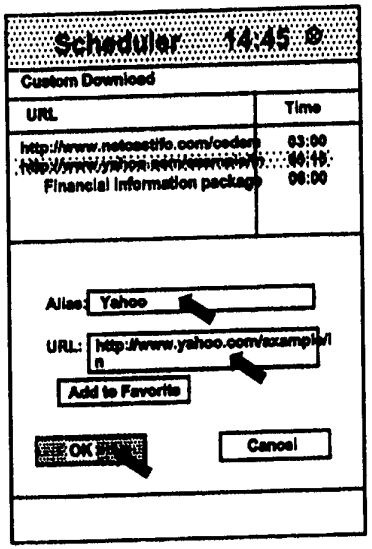

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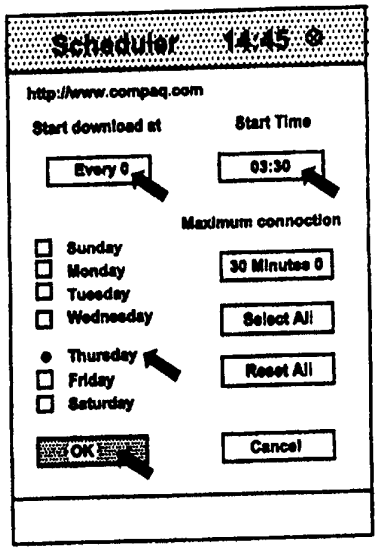

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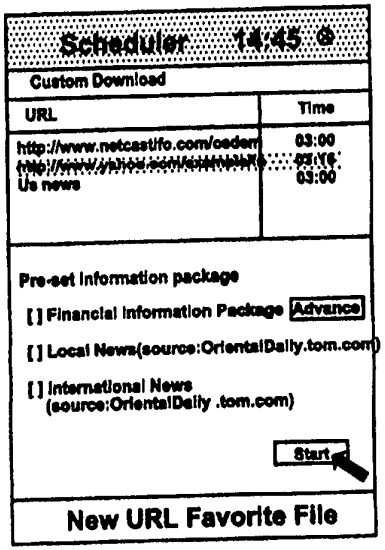

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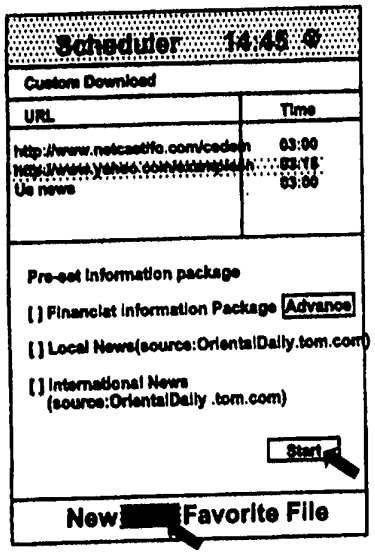

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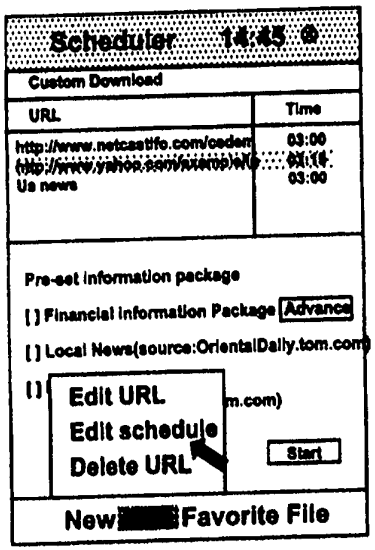

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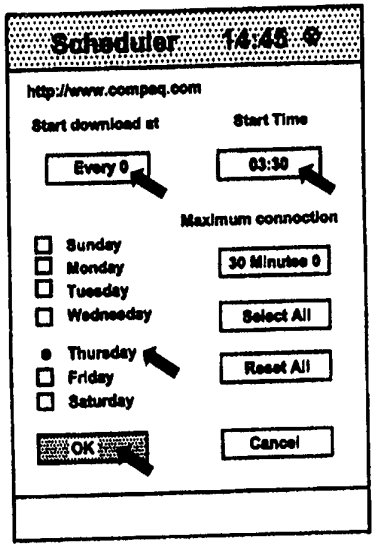

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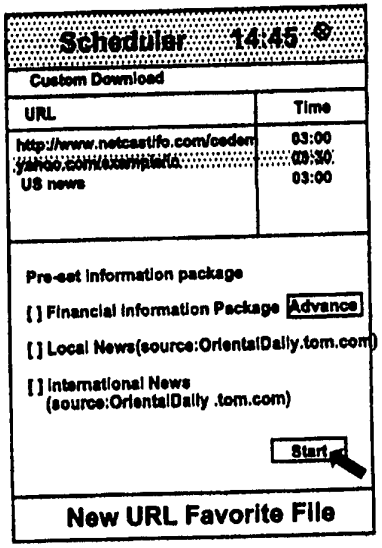

Fig.2.14

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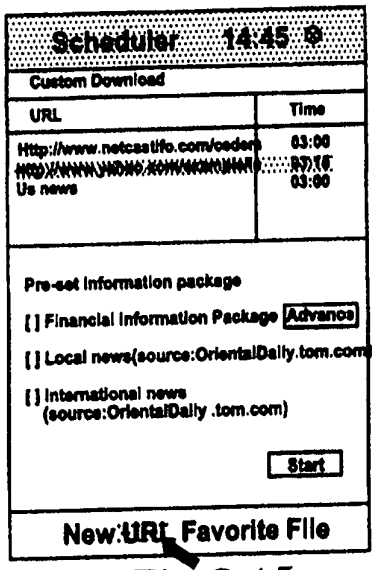

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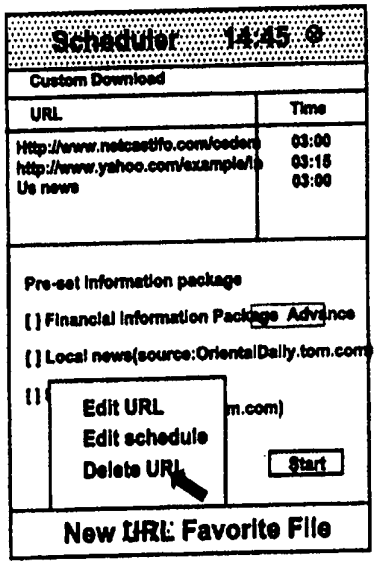

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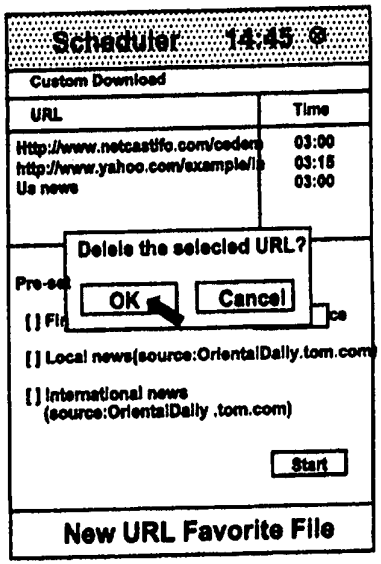

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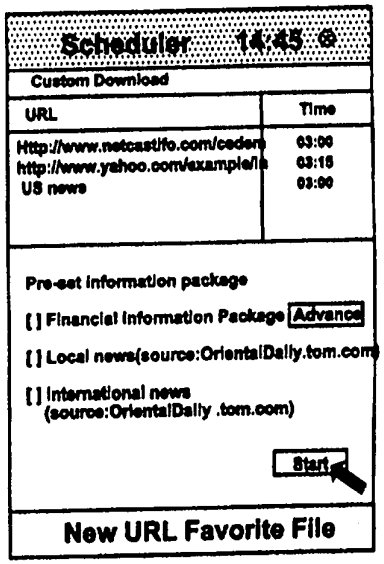

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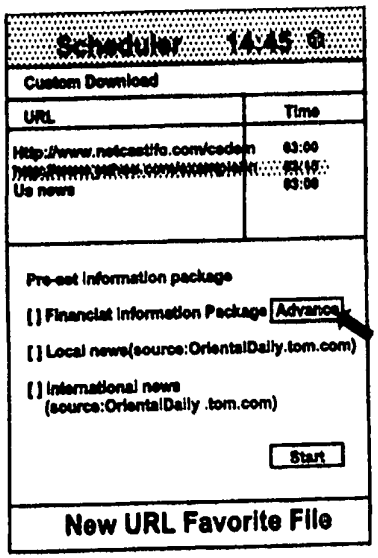

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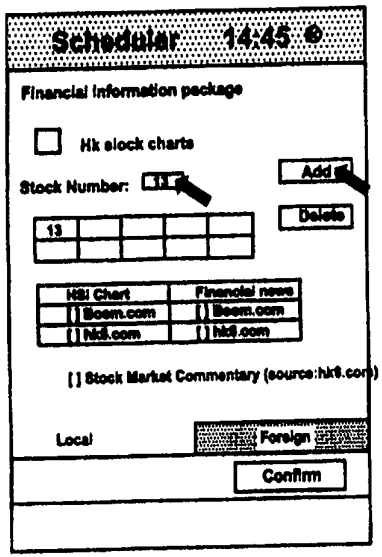

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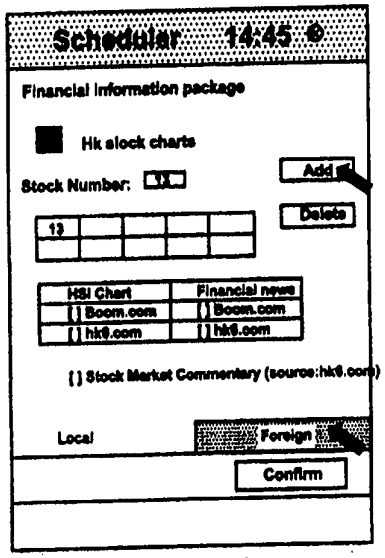

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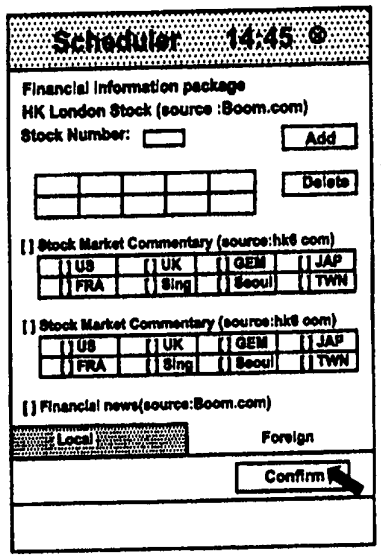

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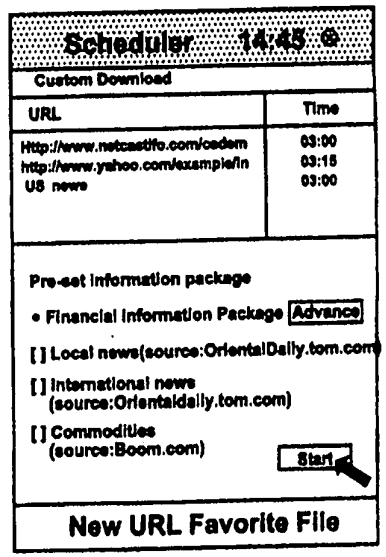

Fig.2.23

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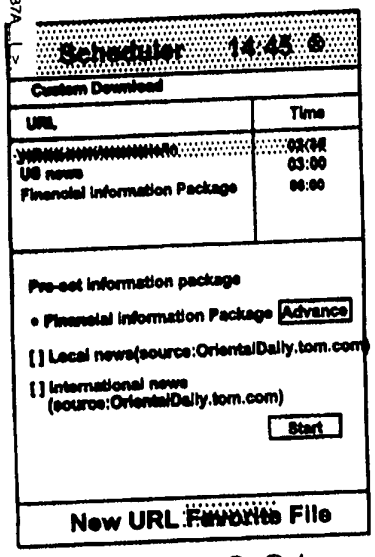
dd Favorite



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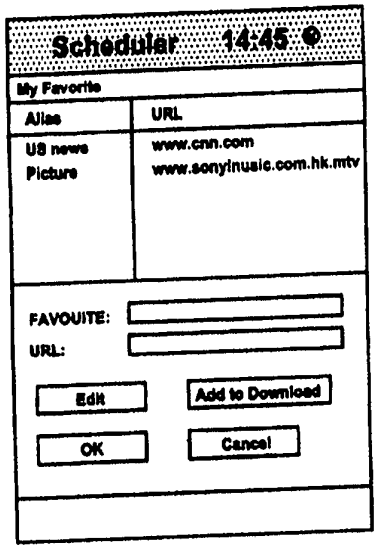

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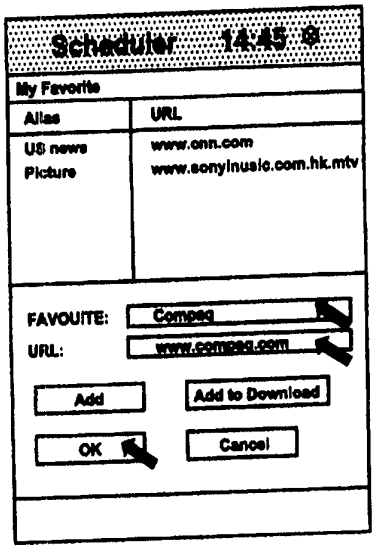

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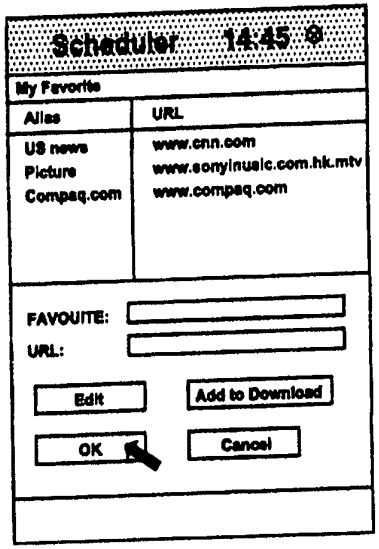

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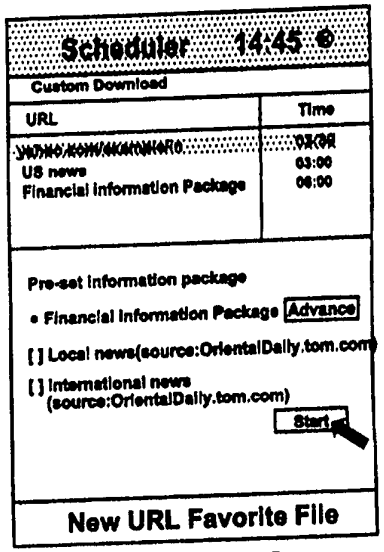

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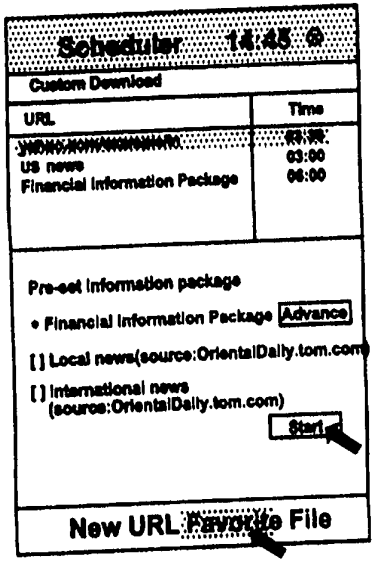

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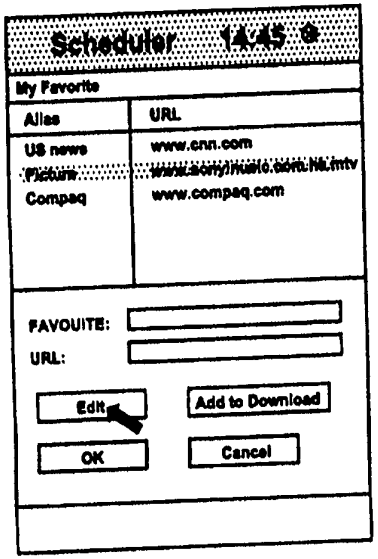

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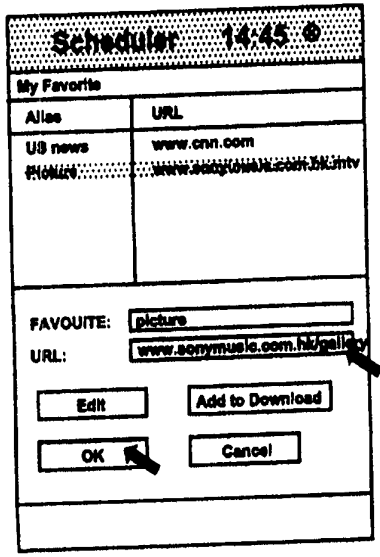

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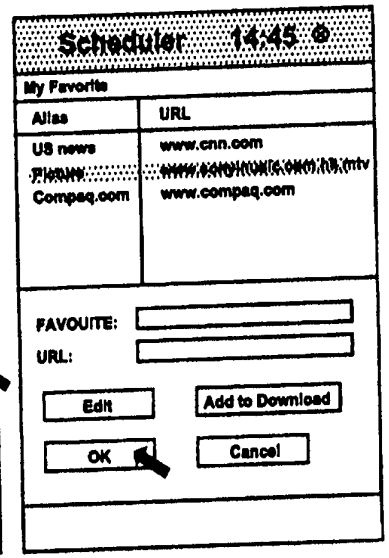

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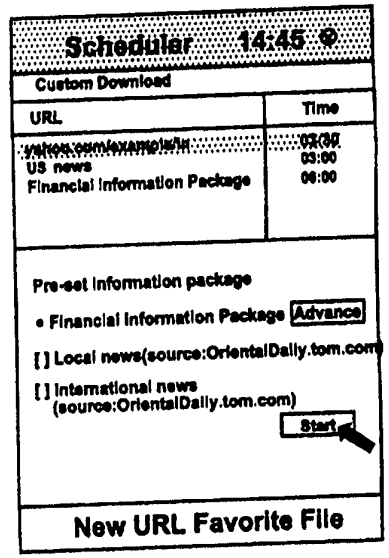

Fig.2.33

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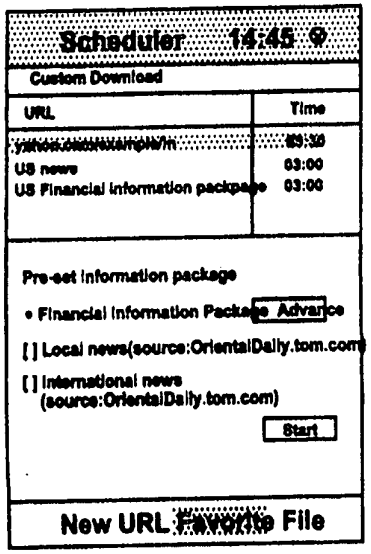
Set Favorite for download



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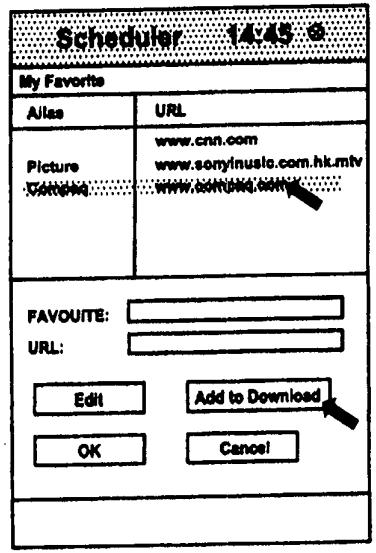

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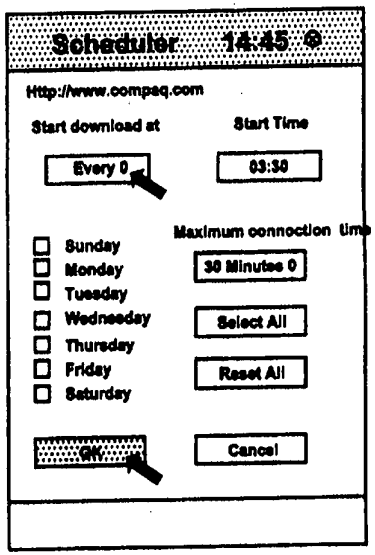
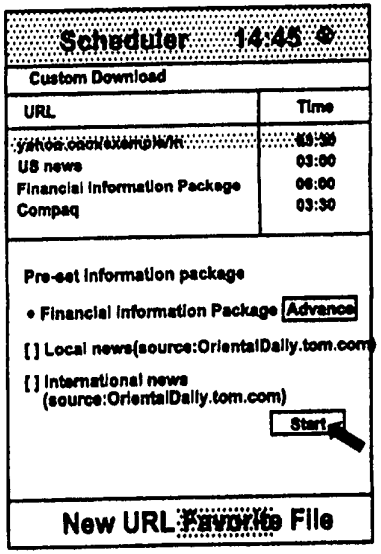


Fig.2.36



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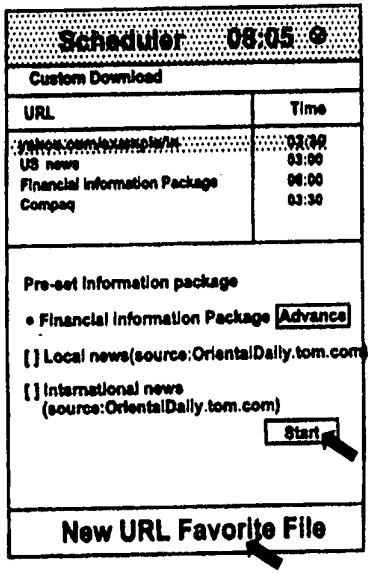

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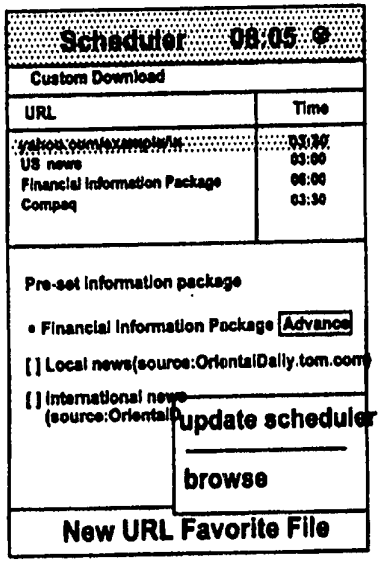

Fig.2.39

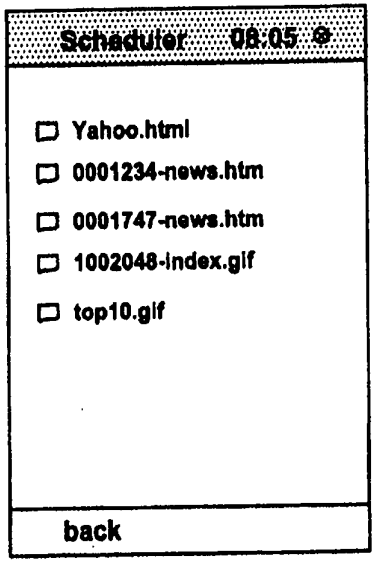

Fig.2.40

AUTOMATIC DOWNLOADING FOR MOBILE COMPUTING DEVICES

This invention relates to providing automatic downloading of data to mobile computing devices.

Increasingly small mobile wireless computing devices are becoming increasingly popular. Such devices include personal digital assistants (PDAs) and third generation mobile phones that in addition to acting as communication devices also have a degree of computing power. Such devices are provided with means for accessing the Internet through a wireless phone connection. In the case of third generation wireless mobile phones this connection to the Internet is made through the phone itself, for PDAs and like devices a modem card may be provided that allows the PDA or the like to access the Internet through a mobile phone.

Such wireless mobile computing devices allow a user to access a wide range of information. The present invention aims to enhance the services offered by such devices and thus to make them still more convenient for a user.

According to the present invention there is provided a method for automatically downloading data to a wireless mobile computing device, comprising automatically connecting the mobile computing device to the Internet through a wireless mobile phone in accordance with a prearranged schedule stored in said mobile computing device, and downloading desired data from the Internet from predefined data sources, the addresses of said data sources being stored in said mobile computing device.

An advantage of the present invention is that in a preferred embodiment at least some of the data sources may be freely chosen by a user. In addition, or alternatively, however, at least some of said data sources may be preset in the mobile computing device. If such preset data sources are provided, however, it is preferable that they may be customised by a user.

Preferably a user may set different schedules for downloading data from different sources (eg hourly, daily, weekly and so on) and preferably the schedule may be chosen by a user. A schedule for a download may be a one-off event or may be a recurring event with any desired frequency.

The present invention is particularly suitable for implementation with a mobile computing device such as a personal digital assistant and a wireless mobile phone, however it is also possible that the mobile computing device and the wireless mobile phone may be formed as one device.

According to another aspect of the present invention there is further provided a system for automatically downloading data to a wireless mobile computing device, comprising means for automatically connecting the mobile computing device to the Internet through a wireless mobile phone in accordance with a prearranged schedule stored in a memory means of said mobile computing device, and means for downloading desired data from the Internet from predefined data sources, the addresses of said data sources being stored in said memory means of said mobile computing device.

The memory means may include memory storage areas for storing a dial-up number, addresses of desired data sources, download schedules, and aliases and

favourites of said data sources, and the system may comprise means for editing the contents of said memory storage areas.

According to a still further aspect the present invention provides a combination of a wireless mobile computing device and a wireless mobile phone, wherein said mobile computing device comprises, memory areas for storing details of addresses for desired data downloads and for storing schedules for executing data downloads from said addresses, means for editing the contents of said memory areas, and means for connecting said mobile computing device through said wireless mobile phone to the Internet in accordance with said schedules to execute said downloads.

According to a still further aspect the present invention provides a wireless mobile computing device, wherein said mobile computing device comprises, memory areas for storing details of addresses for desired data downloads and for storing schedules for executing data downloads from said addresses, means for editing the contents of said memory areas, and means for connecting said mobile computing device through a wireless mobile phone to the Internet in accordance with said schedules to execute said downloads.

An embodiment of the invention will now be described with reference to the accompanying drawings, in which:

Fig.1 is a flowchart illustrating a first embodiment of the invention, and

Fig.2 is a series of exemplary screens displayed on a PDA in accordance with an embodiment of the invention.

An important aspect of the present invention, at least in its preferred forms is that it enables a user to predefine custom downloads. A user may enter into a PDA details of

information that is to be downloaded and when. For example, Fig.2 shows a typical series of screens that may be displayed on a PDA.

As shown in Fig.2.1 the screen may have an upper display showing the addresses of websites selected for a customised download. In addition, a series of preset information packages may be provided and which are displayed in the lower half of the screen. These preset packages may include news, financial information and weather from a range of recognised local or overseas sources. A user may select from any of these pre-set packages that are stored in the PDA and may select any combination of data from these sources for updates at intervals to be determined by the user.

In addition to these preset information sources, however, a user may customise the download by entering details of favourite websites and sources of data. For example, in Figs.2.2 to 2.5 a sequence of screens is shown in which a user enters a command to access www.cnn.com every Thursday at the time 03:30. The website URL is entered along with an alias "US news" which is then added to the part of the screen displaying the pre-stored download addresses. Providing an alias may be helpful in enabling a user to read the screen, as a short easily remembered alias may be simpler to read and remember than a long URL address.

Existing pre-stored addresses may be edited as shown in Figs.2.6 to 2.10. In these Figures one address is selected from the list of prestored addresses and then edited. The schedule, ie the times and frequencies of the downloads, may also be edited by a user as shown in Figs.2.11 to 2.14. The time and frequency of any download can be edited as desired. The schedule for a download may be set as a one-off event, or it may be set as a recurring event with any desired frequency. Different downloads, ie the connections to

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different sites, may have different schedules for their downloads. It will also be understood that a stored address for downloads can of course be deleted as shown in Figs.2.15 to 2.18.

As explained above, in addition to a customized download, the PDA may be provided with a predefined selection of standard downloads, for example local news, international news, financial news, financial commentary and financial information, weather (local and international). This preset information can also be tailored to meet a user's specific requirements, as shown for example in Figs.2.19 to 2.23. For example a user may select particular stock market information to be downloaded, weather in particular cities, or may select news from particular regions.

As is shown in Figs.2.24 to 2.28, a subset of addresses for downloads may be specified as a "favourite" group and the entries in the favourites list can be edited (Figs.2.29 to 2.33). Favourites can also be set for downloads at desired times and intervals as with any other address.

Finally, as shown in Figs.2.34 to 2.40 downloaded files can be retrieved at any time.

Fig.1 shows a flowchart for how the automatic downloading may be performed. It will be understood that the PDA will contain an area within its local memory for storing data necessary to the automatic downloading. This memory area 1 will comprise four sub-areas comprising respectively an area 2 for storing the dial-up number to connect the PDA to a server, an area 3 for containing the settings for user defined downloads (eg addresses, times), an area 4 for storing details of favourites and aliases, and an area 5 for storing the files containing the preset packages as plug-in links.

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To begin with the automatic download scheduling routine is initiated and the data files stored in the memory area 1 are read. The routine then checks the time from the internal clock of the PDA to determine whether the routine has been started because it is time to download files according to the user defined schedule, or whether the routine has been started manually by a user. In the latter case the routine assumes that a user wishes to manual input or edit data either by adding or modifying or deleting files to be downloaded.

If the routine determines that it has been initiated because a download is scheduled, then the routine progresses to a connection stage during which the routine uses the dial-up number to establish an Internet connection to the server through a wireless mobile phone to which the PDA is connected. In the event of failure to make a connection on the first attempt, three attempts in total are permitted. When a connection is made all the addresses due for a download are accessed in turn and updated information is downloaded to the PDA.

When the downloads are complete, the routine checks the memory area to determine when the next download is scheduled and sets the time for that download. The routine then quits. Automatic power-on and automatic power-off to the PDA may be provided to activate and them terminate the automatic download operation.

It will be understood that the present invention, at least in its preferred forms, enables a PDA to have enhanced functionality. A wide range of information downloads can be set in the scheduler that can be predefined by a user. Standard plug-in packages of conventionally desired information are provided, which packages can in turn be

customised. Downloads can be scheduled as one-off events, or can be set as recurring events.

CLAIMS

1. A method for automatically downloading data to a wireless mobile computing device, comprising automatically connecting the mobile computing device to the Internet through a wireless mobile phone in accordance with a prearranged schedule stored in said mobile computing device, and downloading desired data from the Internet from predefined data sources, the addresses of said data sources being stored in said mobile computing device.

2. A method as claimed in claim 1 wherein at least some of said data sources may be freely chosen by a user.

3. A method as claimed in claim 1 or 2 wherein at least some of said data sources are preset in said mobile computing device.

4. A method as claimed in claim 3 wherein said preset data sources may be customised by a user.

5. A method as claimed in any preceding claim wherein data from different data sources may be downloaded in accordance with different schedules.

6. A method as claimed in any preceding claim wherein the schedule may be chosen by a user.

7. A method as claimed in any preceding claim wherein a download may be a one-off event or may be a recurring event with any desired frequency.

8. A method as claimed in any preceding claim wherein said mobile computing device and said wireless mobile phone are integrated as one device.

9. A method for automatically downloading data to a wireless mobile computing device substantially as hereinbefore described with reference to the accompanying drawings.

10. A system for automatically downloading data to a wireless mobile computing device, comprising means for automatically connecting the mobile computing device to the Internet through a wireless mobile phone in accordance with a prearranged schedule stored in a memory means of said mobile computing device, and means for downloading desired data from the Internet from predefined data sources, the addresses of said data sources being stored in said memory means of said mobile computing device.

11. A system as claimed in claim 10 wherein said memory means includes memory storage areas for storing a dial-up number, addresses of desired data sources, download schedules, and aliases and favourites of said data sources.

12. A system as claimed in claim 11 comprising means for editing the contents of said memory storage areas.

13. A system for automatically downloading data to a wireless mobile computing device substantially as hereinbefore described with reference to the accompanying drawings.

14. A combination of a wireless mobile computing device and a wireless mobile phone, wherein said mobile computing device comprises, memory areas for storing details of addresses for desired data downloads and for storing schedules for executing data downloads from said addresses, means for editing the contents of said memory areas, and means for connecting said mobile computing device through said wireless mobile phone to the Internet in accordance with said schedules to execute said downloads.

15. A wireless mobile computing device, wherein said mobile computing device comprises, memory areas for storing details of addresses for desired data downloads and for storing schedules for executing data downloads from said addresses, means for editing the contents of said memory areas, and means for connecting said mobile computing device through a wireless mobile phone to the Internet in accordance with said schedules to execute said downloads.

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): G4A (AFGN AUDB)

Int Cl (Ed.7): G06F (17/30)

Other: Online: WPI, EPODOC, PAJ, INSPEC, XPESP, IBM TDB, IEL, COMPUTER, Selected Internet sites

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X,E	WO 02/01397 A1	(VERTICAL) See e.g. page 3 lines 26-29, page 31 line 17 to page 32 line 7, and page 36 lines 2-10	1-15
X,E	WO 01/18686 A1	(HUH) See e.g. page 3 lines 25-27 and page 9	1-15
X	WO 99/57656 A1	(CITIZEN) See e.g. pages 5,7,8	1-15
X	US 5978842	(NOBLE) See e.g. column 11 and the abstract	1-15
X	US 5978807	(MANO) See whole document, e.g. the abstract	1-15
X	US 5768528	(STUMM) See e.g. the abstract and columns 1,2	1-15
X,E	JP 2001-282672 A	(NIPPON) See e.g. the WPI and PAJ abstracts	1-15
X	JP 100187563 A	(NIPPON) See e.g. the WPI and PAJ abstracts	1-15
X	http://www.irasia.com/listco/hk/hutchison/newsflash/n010117.htm, "Hutchison Telecom is First in Hong Kong to Launch "Orange PDA Automatic Download Scheduler Service" 17 January 2001		1-15

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.